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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,294	07/11/2003	Yoko Hirai	03403/HG	4368

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EXAMINER	
SHAH, MANISH S	

ART UNIT	PAPER NUMBER
2853	

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/618,294	HIRAI, YOKO	
	Examiner	Art Unit	
	Manish S. Shah	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-3, 5-6 & 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cleary et al. (# US 6457823) in view of Ushirogouchi et al. (# US 2003/0231234).

Cleary et al. discloses an inkjet image forming method including jetting UV ray curable ink from an inkjet head onto a recording substrate (element: 28, 40; figure: 1, 2, 4), while conveying substrate; and exposing the jetted ink on the recording substrate to UV rays irradiated by an ultraviolet ray-emitting light source (element: 24, 42, figure: 2, 4), wherein inkjet head is line shaped inkjet head installed in perpendicular direction to a conveying direction of the recording substrate, and UV ray light source is a UV ray tube, which fixed at downstream position of the inkjet head and in perpendicular direction of conveying direction of the recording substrate (figure: 4). They also disclose that the exposing steps are started right after ejecting ink to the recording medium, which is same as started in 0.0005 to 1 second (column: 4, line: 60-67). They also disclose that the plural UV ray emitting light sources, which have different peak wavelengths from each other (figure: 8A, 9A).

Cleary et al. differ from the claim of the present invention in that (1) a surface temperature of the UV ray-emitting light source is not more than 60 degree C.

Ushirogouchi et al. teaches that to get the high quality printed image, ink jet image forming method includes the exposing steps, wherein a surface temperature of the UV ray- emitting light source is from 50 to 80 degree C ([0203]-[0206]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the image forming method of Cleary et al. by the aforementioned teaching of Ushirogouchi et al. in order to have a high quality printed image.

2. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cleary et al. (# US 6457823) in view of Ushirogouchi et al. (# US 2003/0231234) as applied to claims 1-3, 5-6 & 8 above, and further in view of Figov (# US 6095050).

Cleary et al. and Ushirogouchi et al. discloses all the limitation of the image forming method except that the distance between a surface of the UV ray emitting light source and the recording substrate is from 0.1 mm to 100 mm.

Figov teaches that the smear resistance, smudged resistance printed image, the distance between a surface of the UV ray emitting light source and the recording substrate is approximately 10 cm (100 mm) (column: 5, line: 1-5).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the inkjet image forming method of Cleary et al. as modified by the aforementioned teaching of Figov in order to have a smudged resistance and smear resistance printed image.

3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cleary et al. (# US 6457823) in view of Ushirogouchi et al. (# US 2003/0231234) as applied to claims 1-3, 5-6 & 8 above, and further in view of Hibino et al. (# US 5864354).

Cleary et al. and Ushirogouchi et al. discloses all the limitation of the image forming method except that the UV ray emitting light source is a fluorescent light source including a fluorescent material.

Hibino et al. teaches that to get the high quality printing with good fixing property, image forming method includes the UV ray emitting light source is a fluorescent light source including a fluorescent material (column: 15, line: 30-60).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the inkjet image forming method of Cleary et al. as modified by the aforementioned teaching of Hibino et al. in order to have a printed image with good fixing property, which gives high quality printed image.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cleary et al. (# US 6457823) in view of Ushirogouchi et al. (# US 2003/0231234) as applied to claims 1-3, 5-6 & 8 above, and further in view of Roth (# US 5889084).

Cleary et al. and Ushirogouchi et al. discloses all the limitation of the image forming method except that the UV ray curable ink includes a cationic polymerization initiator and a cationic polymerization monomer.

Roth teaches that to get the chemical resistance and smear resistance printed image, inkjet ink includes a cationic polymerization initiator and cationic polymerization monomer (see Abstract; column: 3, line: 35-55).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink composition of Cleary et al. as modified by the aforementioned teaching of Roth in order to have a chemical resistance and smear resistance printed image.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(1) Codos et al. (# US 6312123) discloses the inkjet printing process including jetting the UV curable ink while conveying the recording medium (element: 25; figure: 1), and exposing the jetted ink to UV ray (element: 24; figure: 1).

(2) Wen et al. (# US 6092890) discloses the inkjet printing process including jetting the UV curable ink while conveying the recording medium (figure: 1), and exposing the jetted ink to UV ray (element: 52; figure: 1).

(3) Ylitalo et al. (# US 6554414) discloses the inkjet printing process including jetting the UV curable ink while conveying the recording medium, and exposing the jetted ink to UV ray (figure: 1-5).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manish S. Shah whose telephone number is (571) 272-2152. The examiner can normally be reached on 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Manish S. Shah
Examiner
Art Unit 2853

MSS
9/16/04